

Nanosatellites - 3U Cubesat

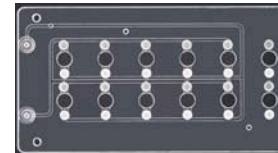
General Description

- Triple cube (3U: 10 x 10 x 35 cm) autonomous spacecraft
- 4W power
- 5 kg total satellite mass
- Magnets for passive attitude control
- Communications systems (C&DH radio + beacon)
- Internal pressurized volume
- Launched as secondary payload

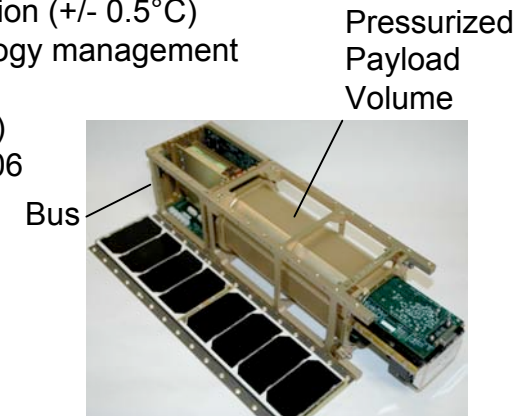


GeneSat-1

- Pressurized volume
- Fine temperature regulation ($\pm 0.5^{\circ}\text{C}$)
- Well plate format for biology management
- Fluorescent detector(s)
- Light scattering sensor(s)
- Launched December 2006

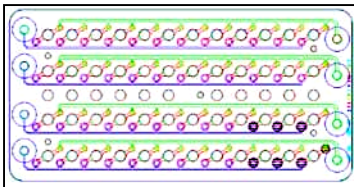


GeneSat-1 Sample Card

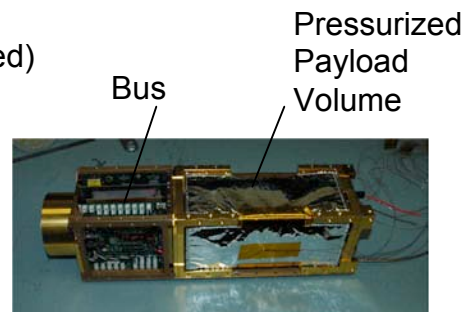


Pharmasat

- Pressurized volume (larger than GeneSat-1)
- Fine temperature regulation ($\pm 0.5^{\circ}\text{C}$)
- Well plate format for biology management (48 wells)
- Luminescence detector(s)
- Light scattering sensor(s)
- Launch: August 2008 (planned)



Pharmasat Sample Card



Optional Configurations

- Unpressurized (exposed) payload volumes
- Articulated solar panels - increased power
- Alternative attitude control techniques - i.e., gravity gradient
- Micropropulsion
- Higher bandwidth downlink - imaging
- Different sample cards/fluidics
- Alternate optical sensor types